Article:
Aunger, J.A. orcid.org/0000-0001-6975-4570, Millar, R. and Greenhalgh, J. orcid.org/0000-0003-2189-8879 (2023) Modelling lifecycles of inter-organizational collaborations in healthcare: a systematic review and best-fit framework synthesis. Journal of Health Organization and Management, 37 (4/5). pp. 409-442. ISSN 1477-7266

https://doi.org/10.1108/jhom-01-2022-0025

Modelling life cycles of inter-organizational collaborations in healthcare: a systematic review and best-fit framework synthesis

Journal:	*Journal of Health Organization and Management*
Manuscript ID	JHOM-01-2022-0025.R2
Manuscript Type:	Original Article
Keywords:	Public management, healthcare, Partnering, Health care, collaboration

Search Strategy

HMIC Commentary search

1. buddying.mp.
2. (clinical adj1 network).mp. [mp=title, other title, abstract, heading words]
3. merger.mp.
4. acquisition.mp.
5. (joint adj1 management).mp. [mp=title, other title, abstract, heading words]
6. consolidation.mp.
7. (coordinating or co-ordinating or coordination or co-ordination).mp. [mp=title, other title, abstract, heading words]
8. (hospital adj1 chain$).mp. [mp=title, other title, abstract, heading words]
9. federation.mp.
10. (joint adj1 working).mp. [mp=title, other title, abstract, heading words]
11. (partnership adj1 working).mp. [mp=title, other title, abstract, heading words]
12. alliance.mp.
13. (joint adj1 commissioning).mp. [mp=title, other title, abstract, heading words]
14. vanguard.mp.
15. exp Integration/
16. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
17. health care/ or acute care/ or medical care/ or primary care/ or public sector/
18. 16 and 17
19. opinion*.ti.
20. (view or views).ti.
21. editorial.mp.
22. note.mp.
23. comment.mp.
24. letter.mp.
25. or/19-24
26. 18 and 25
27. limit 26 to yr="1990"

HMIC review, framework, theory, evaluation search

Search strategy

1 buddying.mp.
2 (clinical adj1 network).mp. [mp=title, other title, abstract, heading words]
3 merger.mp.
4 acquisition.mp.
5 (joint adj1 management).mp. [mp=title, other title, abstract, heading words]
6 consolidation.mp.

7 (coordinating or co-ordinating or coordination or co-ordination).mp. [mp=title, other title, abstract, heading words]
8 (hospital adj1 chain$).mp. [mp=title, other title, abstract, heading words]
9 federation.mp.
10 (joint adj1 working).mp. [mp=title, other title, abstract, heading words]
11 (partnership adj1 working).mp. [mp=title, other title, abstract, heading words]
12 alliance.mp.
13 (joint adj1 commissioning).mp. [mp=title, other title, abstract, heading words]
14 vanguard.mp.
15 exp Integration/
16 health care/ or acute care/ or medical care/ or primary care/
17 administration/ or organisational structure/ or organisational theory/ or organisations/
18 15 or 16 or 17
19 7 or 10
20 18 and 19
21 1 or 2 or 3 or 4 or 5 or 6 or 8 or 9 or 11 or 12 or 13 or 14 or 20
22 evaluat$.mp.
23 interven$.mp. [mp=title, other title, abstract, heading words]
24 assess$.mp. [mp=title, other title, abstract, heading words]
25 trial.mp. [mp=title, other title, abstract, heading words]
26 model.mp. [mp=title, other title, abstract, heading words]
27 review.mp. [mp=title, other title, abstract, heading words]
28 (case adj1 study).mp. [mp=title, other title, abstract, heading words]
29 theory.mp. [mp=title, other title, abstract, heading words]
30 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29
31 21 and 30
32 limit 31 to yr="1990 -Current"

Medline and PsycINFOSearch strategy

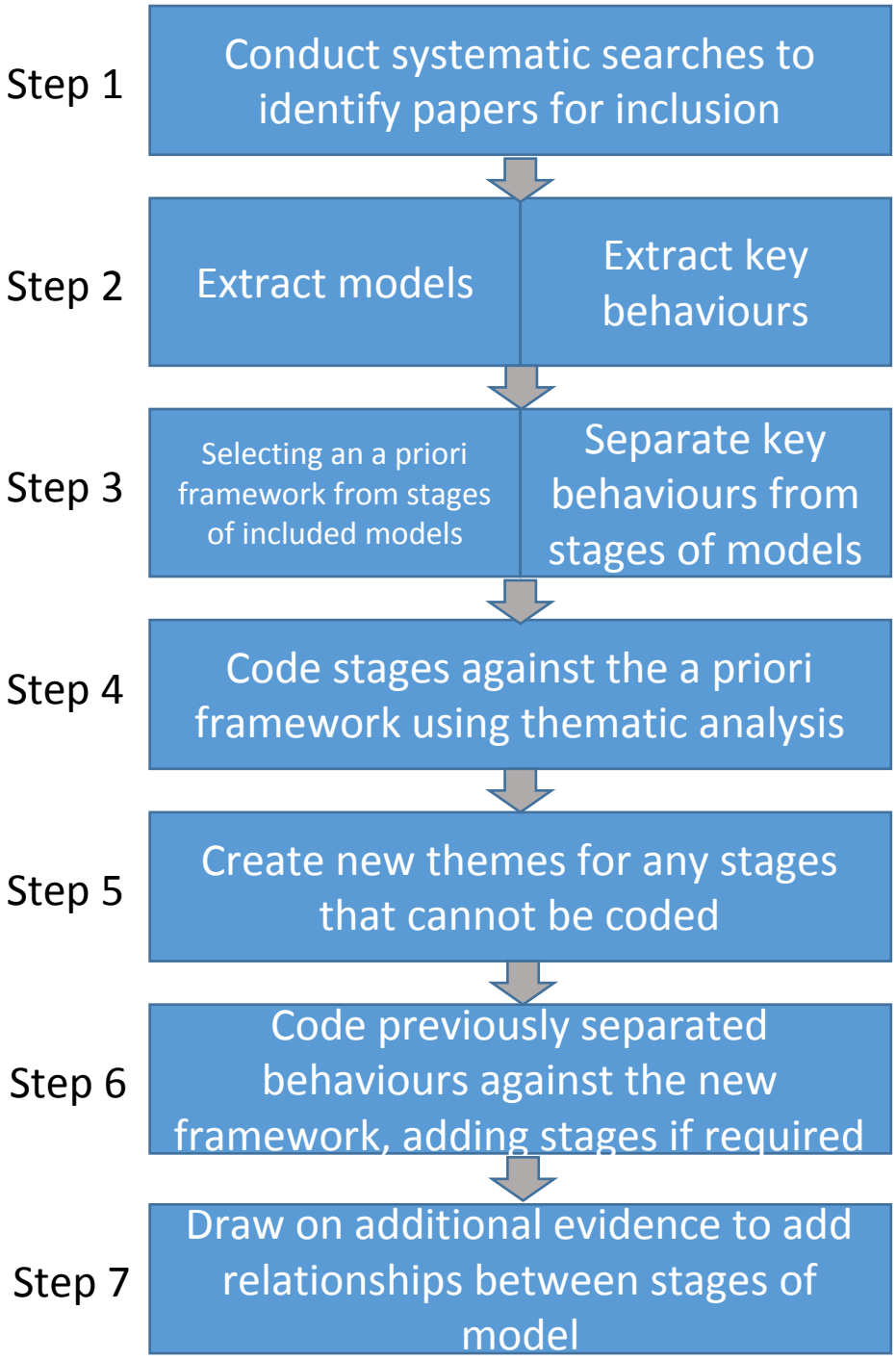
1 buddying.mp.
2 (clinical adj1 network).mp.
3 merger.ti.
4 acquisition.ti.
5 (joint adj1 management).mp.
6 consolidation.ti.
7 (coordinating or co-ordinating or coordination or co-ordination).ti.
8 (hospital adj1 chain$).ti.
9 federation.ti.
10 (joint adj1 working).ti.
11 (partnership adj1 working).mp.
12 alliance.ti.
13 (joint adj1 commissioning).ti.
14 vanguard.mp.

15 systems integration/ or "health care facilities, manpower, and services"/ or "health care economics and organizations"/ or health services administration/ or "health care quality, access, and evaluation"/
16 partnership.mp.
17 partnering.mp.
18 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 16 or 17
19 15 and 18
20 limit 19 to yr="1990 -Current"

Social policy and practice database search strategy

1 partnering.mp. [mp=abstract, title, publication type, heading word, accession number]
2 partnership.mp. [mp=abstract, title, publication type, heading word, accession number]
3 "joint working".mp. [mp=abstract, title, publication type, heading word, accession number]

4 merger.mp. [mp=abstract, title, publication type, heading word, accession number]
5 acquisition.mp. [mp=abstract, title, publication type, heading word, accession number]
6 alliance?.mp. [mp=abstract, title, publication type, heading word, accession number]
7 "partnership working".mp. [mp=abstract, title, publication type, heading word, accession number]
8 buddying.mp. [mp=abstract, title, publication type, heading word, accession number]
9 (clinical adj1 network).mp. [mp=abstract, title, publication type, heading word, accession number]
10 (coordinating or co-ordinating or coordination or co-ordination).mp. [mp=abstract, title, publication type, heading word, accession number]
11 (joint adj1 commissioning).mp. [mp=abstract, title, publication type, heading word, accession number]
12 vanguard.mp. [mp=abstract, title, publication type, heading word, accession number]
13 integration.mp. [mp=abstract, title, publication type, heading word, accession number]
14 healthcare.mp. [mp=abstract, title, publication type, heading word, accession number]
15 hospital?.mp. [mp=abstract, title, publication type, heading word, accession number]
16 evaluat*.mp. [mp=abstract, title, publication type, heading word, accession number]
17 intervention.mp. [mp=abstract, title, publication type, heading word, accession number]
18 model.mp. [mp=abstract, title, publication type, heading word, accession number]
19 review.mp. [mp=abstract, title, publication type, heading word, accession number]
20 (case adj1 study).mp. [mp=abstract, title, publication type, heading word, accession number]
21 theory.mp. [mp=abstract, title, publication type, heading word, accession number]
22 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
23 14 or 15
24 16 or 17 or 18 or 19 or 20 or 21
25 22 and 23 and 24


Step 1
Conduct systematic searches to identify papers for inclusion
Step 2
Extract models
Extract key behaviours
Step 3
Selecting an a priori framework from stages of included models
Separate key behaviours from stages of models
Step 4
Code stages against the a priori framework using thematic analysis
Step 5
Create new themes for any stages that cannot be coded
Step 6
Code previously separated behaviours against the new framework, adding stages if required
Step 7
Draw on additional evidence to add relationships between stages of model

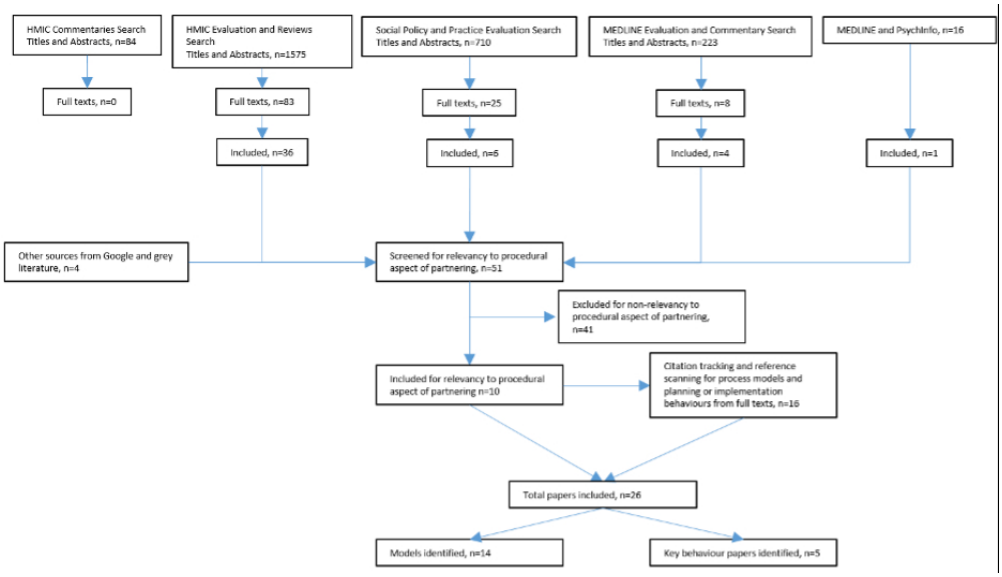


Figure 2. PRISMA diagram.

246x140mm (96 x 96 DPI)

Figure 3. Model by Childs and Dobbins (2003).

786x209mm (38 x 38 DPI)

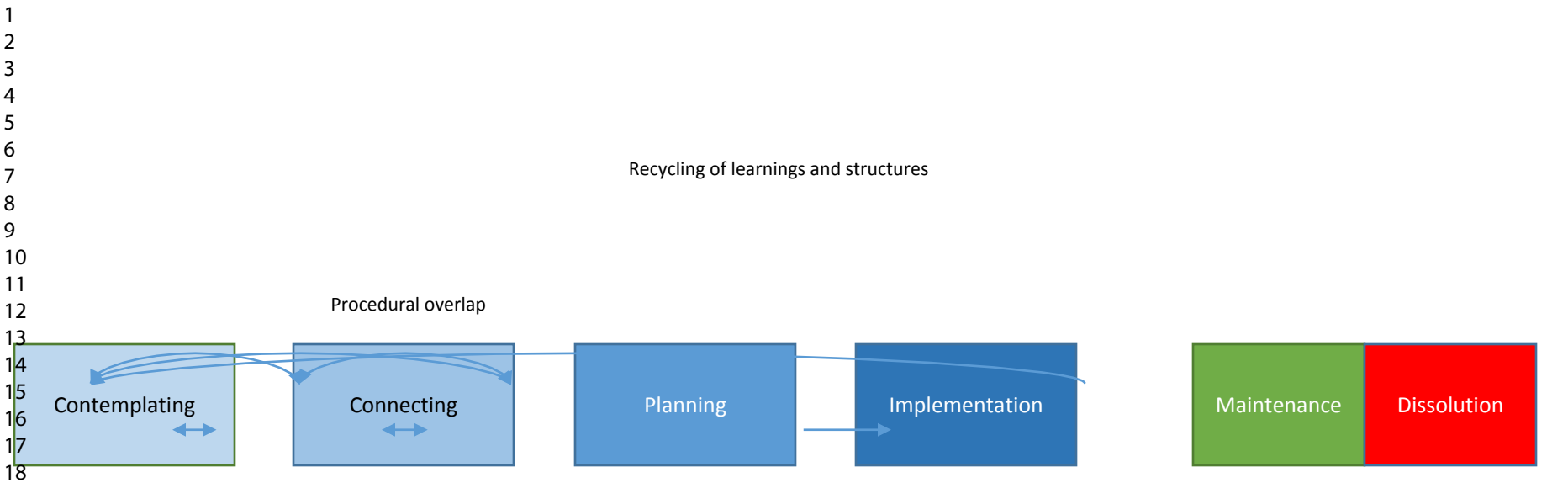

Recycling of learnings and structures
Procedural overlap
Contemplating
Connecting
Planning
Implementation
Maintenance
Dissolution
• Defining the problem
• Identifying resources
• Identifying stakeholders
• Considering solutions to problems i.e. collaborative forms
• Reaching out to potential collaborators
• Building trust
• Establishing respect and ground rules
• Building capacity to collaborate
• Forming an action plan
• Establishing required structure
• Setting targets and intended outcomes
• Contingency planning
• Formalising agreements
Mandated partnering may cause skipping of pre-Planning stages
• Executing the action plan
• Forming required structures
• Managing conflict
• Managing ongoing collaboration
• Evaluating and refining action plans
• Continued delivery of the partnership characterised by ongoing review, communication, and strengthened commitment
• Longer-term aims of the partnership are actively achieved
OR
• Dissolution due to e.g. irreconcilable conflicts
• Completion of a partnership (i.e. merger is completed or buddying arrangement achieves desired outcomes)

Table 1. Partnership types.

Partnership type	**Partnering processes**
Merger	Where two or more organisations combine their resources to form a new organisation.
Acquisition	Where an organisation becomes subsumed by an acquiring organisation
Buddying	Where individuals or organisations with more experience help, mentor, advise or train others
Federation	Where several organisations come together to collaborate to deliver one or more type of service or back office provision.
Joint Venture	Where two or more organisations pool their sovereignty to create a new legal or contractual entity to manage a particular service
Integrated Care Organisation/System	An organisation that brings together some or all of the acute, community, primary care, social care and mental health services in a variety of forms
Service Level Chain	Where one organisation provides services for other providers through a contract, a service level agreement or a fee to use the policies and protocols of the first provider.

Table 2. Studies included as identified by systematic search.

Paper	Paper type	Type of partnership(s)	Relevance to analysis
Axelsson & Axelsson (2006)	Review	Collaborations and integrations in public health	Establishes stages of development of collaboration across organisations
Kendall et al (2012)	Systematic review	Community-based health partnerships	Presents multiple models of the process of collaborating based on Moyer *et al.*, (1999), Fawcett *et al.*, (1995), Sullivan et al, and Crisp, Swerissen and Duckett (2000)
What Works Scotland (2015)	Review	Partnerships across UK public services	Establishes partnerships as cyclical entities
Wildridge et al (2004)	Review	Partnership working	Identifies several models for different kinds of partnerships, based on Child, Faulkner and Tallman (2005), Gray (1989), the Joseph Rowntree Foundation (Wilson and Charlton, 1997), and ourpartnership.org.uk (no date).
Zuckerman et al (1995)	Review	Alliances and hospital federations in healthcare	Identifies several alliance models from Kanter (1989), and Forrest (1992); establishes 'life cycle' model (D'Aunno and Zuckerman, 1987)
Hudson et al (1999)	Review	Inter-agency collaboration in public sector	Identifies key elements important at various stages of process
Vindrola-Padros et al (2019)	Study protocol	Hospital group	Identifies key elements important at various stages of process

The King's Fund (2005)	Case study	Joint commissioning	Identifies key elements important at various stages of process
Murray et al (2018)	Qualitative study	Accountable Care Organisations (ACOs)	Establishes ACOs as cyclical entities
Lowndes and Skelcher (1998)	Case studies	Public service partnerships	Presents a model of partnership process
Mandell and Keast (2008)	Review	Networks	Presents evaluation of effectiveness at different stages of network development using model by Sydow (2004)

Table 3. Included models and identified behaviours.

Models					
Author	Model type (sequential or cyclical)	Model stages	Model behaviours for partnership working	Methodology used to form model	Sector
Moyer et al. (1999)	Sequential	(1) the identification of common ground; (2) establishing the relevant stakeholders; (3) identifying a common project or goal; and (4) working in a multi-agency, multi- sectoral way, or both.	(1) Actors conducting tasks aimed at exploring and auditing existing collaborative attitudes, partner- ships, leaders, resources, activities, and opportunities for collaboration. (2) The actors undertake tasks that engage stakeholders in the notion of collaboration through promotion, education and development of opportunities. (3) Development of shared perspectives and a common vision or foci across multiple stakeholders at all levels. (4) The actors support the engagement of stake- holders in collaborative activity and facilitate the sharing of early successes and rewards	Case study	Public health
Fawcett et al. (1995)	Cyclical	(1) Collaborative planning (2) Community action (3) Community change (4) Community capacity and outcomes	Enhancing experience and competence, enhancing structures (e.g., providing technical assistance, formal processes, and resources to form networks and linkages)	Literature review	Community health development

		(5) Adaptation, renewal and institutionalisation	Removing of social and environmental barriers and enhancing environmental supports		
Lowndes and Skelcher (1998)	Sequential	(1) Pre-partnership collaboration (2) Partnership creation and consolidation (3) Partnership programme delivery (4) Partnership termination or succession	(1) Informality, trust, and co-operation, willingness to work together (2) Negotiation and contest over membership, codifying balance of power, creation of formalised hierarchical structure. (3) Managing competition within partnership, distributing funds for programme implementation, managing conflicts. (4) Strategies to maintain partnership, letting partnership die, or keeping certain aspects but not others.	Case studies	UK urban regeneration partnerships
Child, Faulkner, and Tallman (2005)	Sequential	(1) The nature of co-operation (2) Establishing co-operation (3) Managing co-operation (4) Maturing relationship	(1) Developing trust and motives (2) Selecting partners, deciding on partnership form, power and trust, negotiation, valuations of contributions (3) Management of culture, objectives (4) Organisational learning, separation and divorce	Theoretical	Businesses in general
Childs and Dobbins (2003)	Sequential	(1) Starting the process (2) Achieving agreement (3) Creating a self-sustaining partnership	(1) Finding a champion, a vision, principle of a joint venture (2) Finding more champions in partner organisations, honest communication, goodwill and commitment, reaching mutual	Theoretical	Academic partnership

			understanding, establishing trust, emphasising benefits (3) Establishing ownership and commitment at highest levels, establishing structures, demonstrating practical value		
Gray (1989)	Sequential	(1) Problem setting (2) Direction setting (3) Implementation	(1) Defining the problem, committing to collaboration, identifying stakeholders, establishing levels of participation, identifying resources (2) Establishing ground rules of openness and respect, setting agenda of what is to be done, organising process of collaboration, obtaining information (3) Obtaining agreement of constituents in organisations, external support, setting up required structures, monitoring activities and compliance	Theoretical	Businesses in general
Wilson and Charlton (1997)	Sequential	(1) Coming together due to recognised need (2) Process of dialogue (3) Establishing formal structure (4) Delivering action plan (5) Planning exit strategy where appropriate	(1) Building trust, overcoming differences, building capacity (2) Establishing common ground, agreeing a vision, identifying actions required (3) Setting targets, establishing management team (4) Maintaining partner involvement, evaluating and refining action plan (5) Exit planning	Case studies	Private, voluntary, and community sectors
ourpartnership.org.uk (2007)	Cyclical	(1) Connecting (2) Contracting	(1) Partners get to know each other and plan future activities	Theoretical	Public sector partnerships

		(3) Conflict (4) Collaborating (5) Closing	(2) Negotiating roles, rules, and funding (3) Managing inevitable conflict between partners (4) Keeping momentum going (5) Ending one or more partners' involvements		
Kanter (1989)	Sequential	(1) Selection or courtship (2) Engagement (3) Setting up housekeeping (4) Learning to collaborate (5) Changing within	(1) Realistic self-appraisal and appraisal of partners (2) Developing basic agreement (3) Experience of difficulties in new relationship – cultural differences, lack of understanding, etc. (4) Building mechanisms to overcome barriers. (5) Internal changes required to sustain relationship	Theoretical	Businesses in general
Forrest (1992)	Cyclical	(1) Prealliance (2) Agreement (3) Implementation	(1) Appraisal and selection of appropriate partner, getting a close fit (2) Specifying terms and conditions of alliance, scope, objectives, resources, conflict resolution mechanisms, etc. (3) Open communication, ongoing review, strengthened mutual commitment	Case studies, interviews, questionnaires	Businesses in general
D'Aunno and Zuckerman (1987)	Cyclical	(1) Emergence of a coalition (2) Transition to a federation (3) Maturity of federation	(1) Organisation responds to threat in environment, finds organisation which shares values, define coalition processes, develop membership criteria.	Theoretical	Organisational federations (hospitals)

		(4) Critical crossroads	(2) Motivation to achieve purposes of coalition, increased dependence on coalition for resources, forming management group, mechanisms for coordination. (3) Benefits obtained from investments to date, attain stated objectives, sustain member commitment. (4) Increased centralisation and dependence on federation motivates members to seek hierarchy or withdraw, manage decisions about future of federation.		
Tuckman and Jensen, (1977) applied by Axelsson and Axelsson, (2006)	Cyclical	(1) Forming (2) Storming (3) Norming (4) Performing (5) Adjourning (from Tuckman and Jensen (1977))	(1) Facilitating contacts and collaborations in team (2) Managing conflicts, finding common values and goals. (3) Build and sustain trust between members (4) Concentration of facilitating work of the team towards goal achievement	Literature review	Small-group development
Murray, D'Aunno, and Lewis (2018)	Cyclical	(1) Partnership formation (2) Growth (3) Rise of tension (4) Maturation or dissolution	Not mentioned	Case study	Management partners and healthcare organisations
Sydow (2004)	Sequential	(1) Network formation (2) Struggle for network stability	(1) Building relationships, trust, norms, commitment. (2) Setting foundation, establishing ties with outside stakeholders, develop	Case study	Financial services industry

		(3) Network routinisation (4) Network extension	sponsors, developing skills for new working methods. (3) Routinisation of network co-operation, views and norms established and rules accepted. (4) Network is viable operation, links forged with other networks, network may begin to break apart.		

Key behaviours (not explicitly linked to stages)	
Author	Behaviours
Vindrola-Padros et al. (2019)	(1) Implement evidence-based standard clinical processes (2) Standardise approach to non-clinical processes (3) Centralise non-clinical activity (4) Consolidate clinical support services across the group (5) Consolidate clinical services to drive quality and value (6) Invest in leadership capabilities and workforce development (7) Promote the better use of resources across the group (8) Effective performance management of members (9) Collaborate with local healthcare providers
The King's Fund (2005)	(1) Pick winners early on that will give process credibility (2) Have product champion to provide leadership (3) A resource audit is essential at an early stage of the work (4) Clarity is needed from outset about financial resources committed to the process (5) Sufficient time is needed in the set up phase to ensure structures and priorities of the work are fully worked through
Hudson et al. (1999)	(1) Expectations and constraints (2) Recognition of need to collaborate (3) Identification of a legitimate basis for collaboration (4) Assessment of collaborative capacity

	(5) Articulation of a clear sense of purpose (6) Building trust (7) Ensuring wide organisational ownership (8) Nurturing fragile relationships (9) Selection of an appropriate collaborative relationship (10) Selection of a co-ordination pathway
Sullivan, Barnes, and Matka (2006)	(1) Consolidating (strengthening existing partnership work) (2) Clarifying roles and relations (3) Development of policies to facilitate partnership (4) Innovation strategies such as building momentum for change
Crisp, Swerissen, and Duckett (2000)	(1) Changing policies or management to influence collaborative capacity (2) Provision of skills and attitudes to facilitate collaboration (3) Strengthening existing connections to foster partnership working (4) Fostering partnership working values and engagement

Table 4. Definition of stages in the finalised composite model.

Stage	**Definition**
Contemplating	The organisation is actively thinking about problems it is facing, whether collaborating may be a solution to these problems, and who they could collaborate with.
Connecting	The organisation is reaching out to potential partners and establishing initial relationships, building trust and mutual respect, and building initial capacity for collaborating.
Planning	An action plan is being drawn up between two or more partners, required foundations for organisational structures (e.g. governance arrangements, conflict resolution mechanisms) are being established, aims and objectives for partnerships are being agreed, and legal frameworks are being drafted and signed.
Implementation	The action plan is being executed, the required collaborative structures are put into place, conflicts are being actively managed, action plans are being evaluated and refined as the intermediate outcomes of the partnership (i.e. those relating to the partnership itself) are being achieved.
Maintenance	The partnership moves from being actively managed, to becoming a part of the daily routine and almost 'second nature'. Relatively few conflicts are taking place, and the ultimate outcomes of the partnership are being achieved (i.e. improvements to delivery of services).
Dissolution	The partnership dissolves due to irreconcilable conflicts, or because the aims of the partnership are accomplished and the partnership is no longer required.

Table 5. Full final coding framework identifying stages and behaviours from included papers and how they were coded against our model.

Stages (our model)	**Stages (other models)**	**Behaviours**
Contemplating	• The nature of co-operation (Child et al., 2005) • Problem setting (Gray, 1989)	• Actors conducting tasks aimed at exploring and auditing existing collaborative attitudes, partner- ships, leaders, resources, activities, and opportunities for collaboration. (Moyer et al., 1999) • Defining the problem, committing to collaboration, identifying stakeholders, establishing levels of participation, identifying resources (Gray, 1989) • Pick winners early on that will give process credibility, Have product champion to provide leadership, A resource audit is essential at an early stage of the work, Clarity is needed from outset about financial resources committed to the process (The King's Fund, 2005) • Expectations and constraints, , Recognition of need to collaborate, Identification of a legitimate basis for collaboration, Assessment of collaborative capacity (Hudson et al., 1999).
Connecting	• The identification of common ground (Moyer et al., 1999) • Pre-partnership collaboration (Lowndes & Skelcher, 1998) • Starting the process (Childs & Dobbins, 2003) • Coming together due to recognised need, Process of dialogue (Wilson & Charlton, 1997) • Connecting (ourpartnership.org.uk, 2007) • Selection or courtship (Kanter, 1989) • Prealliance (Forrest, 1992) • Emergence of a coalition (D'Aunno & Zuckerman, 1987) • Forming (Tuckman & Jensen, 1977)	• The actors undertake tasks that engage stakeholders in the notion of collaboration through promotion, education and development of opportunities. (Moyer et al., 1999) • Informality, trust, and co-operation, willingness to work together (Lowndes & Skelcher, 1998) • Developing trust and motives (Child et al., 2005) • Selecting partners, deciding on partnership form, power and trust, negotiation, valuations of contributions (Child et al., 2005) • Finding a champion, a vision, principle of a joint venture (Childs & Dobbins, 2003) • Building trust, overcoming differences, building capacity (Wilson & Charlton, 1997) • Establishing common ground, agreeing a vision, identifying actions required (Wilson & Charlton, 1997) • Partners get to know each other and plan future activities (ourpartnership.org.uk, 2007) • Realistic self-appraisal and appraisal of partners (Kanter, 1989)

	• Partnership formation (Murray et al., 2018) • Network formation (Sydow, 2004)	• Appraisal and selection of appropriate partner, getting a close fit (Forrest, 1992) • Organisation responds to threat in environment, finds organisation which shares values, define coalition processes, develop membership criteria (D'Aunno & Zuckerman, 1987) • Facilitating contacts and collaborations in team (Tuckman & Jensen, 1977) • Building relationships, trust, norms, commitment. (Sydow, 2004) • Articulation of a clear sense of purpose, Building trust, Ensuring wide organisational ownership, Nurturing fragile relationships (Hudson et al., 1999)
Planning	• Establishing the relevant stakeholders, identifying a common project or goal (Moyer et al., 1999) • Collaborative planning (Fawcett et al., 1995) • Establishing co-operation (Child et al., 2005) • Achieving agreement (Childs & Dobbins, 2003) • Direction setting (Gray, 1989) • Establishing formal structure (Wilson & Charlton, 1997) • Contracting (ourpartnership.org.uk, 2007) • Engagement; Setting up housekeeping (Kanter, 1989) • Agreement (Forrest, 1992) • Transition to a federation (D'Aunno & Zuckerman, 1987) • Storming (Tuckman & Jensen, 1977)	• Development of shared perspectives and a common vision or foci across multiple stakeholders at all levels. (Moyer et al., 1999) • Enhancing experience and competence, enhancing structures (e.g., providing technical assistance, formal processes, and resources to form networks and linkages), removing of social and environmental barriers and enhancing environmental supports (Fawcett et al., 1995) • Negotiation and contest over membership, codifying balance of power, creation of formalised hierarchical structure. (Lowndes & Skelcher, 1998) • Finding more champions in partner organisations, honest communication, goodwill and commitment, reaching mutual understanding, establishing trust, emphasising benefits (Childs & Dobbins, 2003). • Establishing ground rules of openness and respect, setting agenda of what is to be done, organising process of collaboration, obtaining information (Gray, 1989). • Setting targets, establishing management team (Wilson & Charlton, 1997). • Negotiating roles, rules, and funding (ourpartnership.org.uk, 2007) • Developing basic agreement (Kanter, 1989) • Specifying terms and conditions of alliance, scope, objectives, resources, conflict resolution mechanisms, etc. (Forrest, 1992) • Motivation to achieve purposes of coalition, increased dependence on coalition for resources, forming management group, mechanisms for coordination. (D'Aunno & Zuckerman, 1987) • Managing conflicts, finding common values and goals. (Axelsson & Axelsson, 2006)

		• Setting foundation, establishing ties with outside stakeholders, develop sponsors, developing skills for new working methods. (Sydow, 2004) • Invest in leadership capabilities and workforce development (Vindrola-Padros et al., 2019) • Sufficient time is needed in the set up phase to ensure structures and priorities of the work are fully worked through (The King's Fund, 2005) • Selection of an appropriate collaborative relationship, Selection of a co-ordination pathway (Hudson et al., 1999) • Obtaining agreement of constituents in organisations, external support, setting up required structures, monitoring activities and compliance (Gray, 1989) • Consolidating (strengthening existing partnership work), Clarifying roles and relations, Development of policies to facilitate partnership, Innovation strategies such as building momentum for change (Sullivan et al., 2006) • Changing policies or management to influence collaborative capacity, Provision of skills and attitudes to facilitate collaboration, Strengthening existing connections to foster partnership working, Fostering partnership working values and engagement (Crisp et al., 2000)
Implementing	• Community action; Community change; Community capacity and outcomes (Fawcett et al., 1995) • Partnership creation and consolidation; Partnership programme delivery (Lowndes & Skelcher, 1998) • Managing co-operation (Child et al., 2005) • Creating a self-sustaining partnership (Childs & Dobbins, 2003) • Implementation (Gray, 1989) • Delivering action plan (Wilson & Charlton, 1997)	• The actors support the engagement of stake- holders in collaborative activity and facilitate the sharing of early successes and rewards (Moyer et al., 1999) • Managing competition within partnership, distributing funds for programme implementation, managing conflicts. (Lowndes & Skelcher, 1998) • Management of culture, objectives (Child et al., 2005) • Establishing ownership and commitment at highest levels, establishing structures, demonstrating practical value (Childs & Dobbins, 2003) • Maintaining partner involvement, evaluating and refining action plan (Wilson & Charlton, 1997) • Managing inevitable conflict between partners (ourpartnership.org.uk, 2007) • Experience of difficulties in new relationship – cultural differences, lack of understanding, etc.; Building mechanisms to overcome barriers. (Kanter, 1989) • Open communication, ongoing review, strengthened mutual commitment (Forrest, 1992). • Build and sustain trust between members (Axelsson & Axelsson, 2006)

	• Conflict; Collaborating (ourpartnership.org.uk, 2007) • Learning to collaborate; Changing within (Kanter, 1989) • Implementation (Forrest, 1992) • Norming (Tuckman & Jensen, 1977) • Growth; Rise of tension (Murray et al., 2018) • Struggle for network stability (Sydow, 2004)	• Implement evidence-based standard clinical processes; Standardise approach to non-clinical processes; Centralise non-clinical activity; Consolidate clinical support services across the group; Consolidate clinical services to drive quality and value; Effective performance management of members; Collaborate with local healthcare providers (Vindrola-Padros et al., 2019)
Maintenance	• Working in a multi-agency, multi-sectoral way, or both. (Moyer et al., 1999) • Adaptation, renewal and institutionalisation (Fawcett et al., 1995) • Maturing relationship (Child et al., 2005) • Maturity of federation (D'Aunno & Zuckerman, 1987) • Performing (Tuckman & Jensen, 1977) • Maturation (Murray et al., 2018) • Network routinisation; Network extension (Sydow, 2004)	• Strategies to maintain partnership (Lowndes & Skelcher, 1998) • Organisational learning (Child et al., 2005) • Keeping momentum going (ourpartnership.org.uk, 2007) • Internal changes required to sustain relationship (Kanter, 1989) • Benefits obtained from investments to date, attain stated objectives, sustain member commitment. (D'Aunno & Zuckerman, 1987) • Concentration of facilitating work of the team towards goal achievement (Axelsson & Axelsson, 2006) • Routinisation of network co-operation, views and norms established and rules accepted; Network is viable operation, links forged with other networks. (Sydow, 2004)
Dissolution	• Partnership termination or succession (Lowndes & Skelcher, 1998) • Planning exit strategy where appropriate (Wilson & Charlton, 1997)	• Letting partnership die, or keeping certain aspects but not others. (Lowndes & Skelcher, 1998) • Separation and divorce (Child et al., 2005) • Exit planning (Wilson & Charlton, 1997) • Ending one or more partners' involvements (ourpartnership.org.uk, 2007)

	• Closing (ourpartnership.org.uk, 2007) • Critical crossroads (D'Aunno & Zuckerman, 1987) • Adjourning (Tuckman & Jensen, 1977) • Dissolution (Murray et al., 2018)	• Increased centralisation and dependence on federation motivates members to seek hierarchy or withdraw, manage decisions about future of federation. (D'Aunno & Zuckerman, 1987) • Network may begin to break apart. (Sydow, 2004)

Modelling life cycles of inter-organizational collaborations in healthcare: a systematic review and best-fit framework synthesis

Abstract

Purpose

Inter-organizational collaboration (IOC) across healthcare settings has been put forward as a solution to mounting financial and sustainability challenges. While ingredients for successful IOC have been explored, there remains limited understanding of the development of IOCs over time.

Design/methodology/approach

We systematically reviewed the literature to identify models applied to IOCs in healthcare across databases such as HMIC and MEDLINE, identifying 2763 titles and abstracts with 26 final papers included. We then used a 'best fit' framework synthesis methodology to synthesize fourteen models of IOC in healthcare and the wider public sector to formulate an applied composite model describing the process through which collaborations change over time. This synthesis comprised extracting stages and behaviours from included models, selecting an a priori framework upon which to code these stages and behaviours, and then re-coding them to construct a new composite model.

Findings

Existing models often did not consider that organisations may undergo many IOCs in their lifetime, nor included 'contemplation' stages or those analogous to 'dissolution', which might negatively impact papers using such models. Our composite model utilizes a life-cycle design comprising five non-linear phases: Contemplating, Connecting, Planning, Implementation, and

Maintenance or Dissolution, and incorporates dynamic elements from Complex Adaptive Systems thinking to reflect the dynamic nature of collaborations.

Originality

This is the first purpose-built model of the life cycles of IOCs in healthcare. The model is intended to inform implementers, evaluators, and researchers of IOCs alike.

Keywords
Public management, partnership, collaboration, health care, social psychology.

Introduction

Healthcare inter-organizational partnerships (or collaborations) constitute complex systems which can form, perform, and dissolve over time for a variety of different reasons (Greenhalgh, 2008). They can be defined as "the process by which organizations with a stake in a problem seek a mutually determined solution by pursuing objectives they could not achieve working alone" (Jurie, 1998, p. 1188).

Significant economic pressures, as well as the continuing impact of the pandemic, have driven providers towards considering these collaborative organizational forms. These range from relatively informal buddying arrangements, to system wide networks or acquisitions (table 1) (The Dalton Review, 2014; Miller and Millar, 2017; Hare, 2020). These collaborations can have many differing drivers – some might be initiated to facilitate interorganizational working, as part of an integrated care system, while others might be driven by a need to turnaround an organization due to poor performance.

Although there have been previous attempts at making typologies of partnerships (Mandell and Steelman, 2003), as well as reviews identifying which factors are key to the success of healthcare collaborations, there remains a relative lack of understanding regarding the temporal dimension of such endeavours (Dickinson and Glasby, 2010; Glasby, Dickinson and Miller,

2011; Elston, 2013; Miller and Millar, 2017; Northern Ireland Audit Office, 2019; Aunger *et al.*, 2020). A selection of models in the literature have sought to identify the stages which collaborations in public service organisations can go through (Axelsson & Axelsson., 2006; Child & Faulkner., 1998; Wildridge et al., 2004; Zuckerman et al., 1995). Yet, these have tended to build on linear assumptions of collaboration, often depicting them as a sequential series of stages with little emphasis on complex systems logic or life cycle dynamics (Gray, 1989; Kanter, 1989; Moyer *et al.*, 1999). For example, the model by Gray (1989) simply has three stages: (1) problem setting, (2) direction setting, and (3) implementation, and does not consider, for example, how many organisations may consider entering into an IOC multiple times, without committing. Underutilisation of complex systems theory in implementation science in health organisation and management has constrained understanding of evidence-based innovations in healthcare (Sarkies *et al.*, 2021).

Such a viewpoint is echoed by organisation and management scholars who have paid particular attention to the organization life cycle (OLC) perspective. Developed between the 1960s and 1990s, (Mosca, Gianecchini and Campagnolo , (2021) ~~Mosca et al (2021)~~ summarise how life cycle models have evoked organism metaphors of organizational development as an evolution through a series of phases and events over time (Ven, 1992). Such life cycles have also tended to be characterised by a linear progression through organizational activities and structures, reducing complexity to uniform and deterministic patterns (Quinn and Cameron, 1983; Stubbart and Smalley, 1999) ~~(Quinn and Cameron 1983; Stubbart and Smalley 1999)~~. Mosca et al (2021) call for a reframing of OLC to accommodate a greater diversity of organizational solutions and outcomes more reflective of the non-linearity that is characteristic of organizational life.

A process view of organisations, which seeks to understand "*how and why things emerge, develop, grow, or terminate over time*", further emphasises how a linear approach can be erroneous (Ven, 1992; Langley *et al.*, 2013, p. 1; Graebner *et al.*, 2014). (Ven, (-1992) drew on a nonlinear process approach to critique prior understandings of process research, stating that use of a linear sequential model can become a 'self-fulfilling prophecy' because it assumes a rigid set of phases occurring one after another. Ven (1992) suggests that reconceptualising rigid stages towards "conceptual tracks" or "categories of events" may be more useful, and highlights the importance of acknowledging that these can occur repeatedly or even out of order. Such a process approach has been used to explain complex phenomena such as the process of inter-organisational collaboration outside of healthcare to understand post-merger integration, for example (Langley *et al.*, 2013). Essential to depicting a process is often use of visual diagrams which can be "*crucial in describing and communicating dynamic process theorizations*" (Langley *et al.*, 2013, p. 8), however, diagrams may obfuscate some of the causal complexity which process approaches seek to explain. Striking a balance between a theory that is interpretable in a diagram, while also not underselling the complexity or conveying a sense of linearity, can be challenging (Langley *et al.*, 2013)

Another common issue in the healthcare and wider public sector literature is the inappropriate translation of models from other institutional fields, applied to inter-organizational collaborations ~~in healthcare and the wider public sector.~~ . For example, Pugalis & Bentley (2013) –applied a model original design to understand a small group development model (Tuckman & Jensen, 1977) to explain why inter organizational partnerships may go on differing trajectories. Use of models outside of their intended purpose can fail to recognize the broader system complexities of IOC. This is indicative of a paucity of purpose-built models suitable for analysing these kinds of collaborations, and was one of the motivators for this present research.

Many models promoted for application in healthcare settings originate from the private sector or outside healthcare altogether, and there has been limited discussion about their applicability or appropriateness of models adopted from ~~outside of such~~other contexts (e.g. Wegner et al. 2016; Jap and Anderson 2007). We argue that there is a need to consider public sector healthcare collaborations differently, based on their differing primary motivations and decision-making processes (Mandell and Steelman, 2003, p. 200; Nutt, 2005; Bullock, Stritch and Rainey, 2015). As Mandell and Steelman (2003) argue, *"collaboration through networks in the public sector involves disparate organizations working toward a common goal and not merely to enhance the performance of one among them"* (Mandell and Steelman, 2003, p. 201).

This paper seeks to build a more contextually appropriate 'composite model' of inter-organizational collaborations in healthcare using a 'best fit' systematic framework synthesis methodology. A clearer, purpose-built model of how these arrangements evolve and are maintained over time has the potential to further inform current developments ~~in healthcare~~ to understand how partnerships in healthcare work, why, and whom they benefit. There is also a need to better understand the various models put forward about these different partnership types and what behaviours can optimise performance at different time points during development (Sullivan and Skelcher, 2003; Conteh, 2013, p. 517; Aunger *et al.*, 2020).

To our knowledge, this is the first composite model which has been formed based on a robust systematic review and synthesis process of existing models of the stages (or cycles) of healthcare collaborations and underlying behaviours that may be common in different 'categories of events' (Ven, 1992). Drawing on the collaborative healthcare and wider public sector literature, we argue that our composite model makes a valuable contribution by placing a greater recognition of the complex systems nature of inter-organizational collaborations and by filling in the gaps present in many of the existing models used by others. Such analysis can

help evaluators and practitioners identify what steps to take at each point to increase the likelihood of collaboration success.

[Table 1 Location]

The aim of this paper is to use a 'best fit' framework synthesis methodology (Carroll, Booth and Cooper, 2011) to (1) systematically identify and review the strengths and weaknesses of existing models of models applied to inter-organizational collaborations in healthcare, and (2) to create a composite model reflective of the inherent complexity of IOC, building upon the strengths and weaknesses of existing models developed for, or applied to, ~~such~~ inter-organisational collaborations in healthcare.

Methodology

'Best fit' framework synthesis methodology

This 'best fit' framework synthesis methodology was chosen for this study (Booth and Carroll, 2015). Frequently used in improvement studies in healthcare (Han *et al.*, 2020; Kakemam *et al.*, 2020), this method was chosen for its flexible and rigorous approach to synthesizing existing frameworks (in this case, process models) with novel data, enabling key gaps in existing understanding to be covered with the formation of a new 'meta-framework' (termed here as a 'composite model'). This new composite model would be purpose-built from many sources of evidence from the healthcare and wider public sector (Booth and Carroll, 2015). The 'Best fit' method for framework synthesis for improvement science (Carroll, Booth and Cooper, 2011; Carroll *et al.*, 2013; Booth and Carroll, 2015) involves seven systematic steps (figure 1). However, as the best fit methodology is not rigid and has a number of permutations for various intended objectives. Thus, we selected the 'meta-framework' strategy proposed by Booth and Carroll (2015), which uses an a priori framework as a base, against which stages and behaviours from other frameworks/models are coded, to build a novel framework/model. Coding was performed in NVivo 12 software.

Given this approach, our method was as follows: (1) conduct a systematic search to identify models in the literature (2) extract models and key behaviours from identified studies, (3) select an a priori framework from stages of included models using thematic analysis and separating key behaviours from stages of models, (4) code stages from other models against the a priori framework, (5) create new themes for any stages that cannot be coded against the a priori framework, (6) code previously separated behaviours against the new framework, adding stages if required, and (7) draw on additional evidence to add relationships between stages in the model. This method differs from a traditional systematic review by adding a method for synthesizing theories and frameworks, rather than focusing on efficacy or findings of the included studies.

[Figure 1 location]

Figure 1. Stages of methodology.

Systematic search

Search

Systematic searches were conducted around the areas of collaboration in a healthcare setting, encompassing a wide range of partnership types such as alliances, buddying, mergers, acquisitions, and hospital groups (table 1). Additionally, Google Scholar searches, citation tracking and reference scanning were used to identify wider public-sector literature. We primarily intended to locate models which had been applied to understanding inter-organisational collaborations in healthcare or the wider public sector.

Search strategy

These searches were run between 20.02.20 and 04.03.20 on databases including Healthcare Management Information Consortium (HMIC), MEDLINE, Social Policy and Practice, and PsychINFO. These databases were chosen for their relevance to the healthcare sector in particular. Additionally, a more informal Google Scholar search was conducted on 11.03.20 to identify any grey literature or elements missed, as well as reference scanning and citation

tracking. This search combined terms including "public sector", "inter-organizational collaboration", "life cycle", and "model" or "framework". We performed an updated Google Scholar search drawing on the same terms on 14.11.22, limited to the period since our previous search, and did not identify any novel models to add to the analysis. Please see Supplementary File 1 for the full systematic search terms and strategy for each database.

Study selection

Inclusion criteria were that the paper had to (1) clearly relate to collaborations between one or more organizations on either a structural or individual level and had to be (2) a case study, evaluation, opinion, or review. As such, papers outlining public-private partnerships would be included at this stage. To reach the final stage of inclusion, the paper had to be relevant to the procedural aspects of partnership by either (1) presenting a model developed for or explicitly applied to collaborations the public sector, or (2) relating to behaviours required for planning or implementing partnerships in the public sector. Exclusion criteria were (1) papers that relate to collaborations or partnerships between staff and patients rather than between organizations. Titles and abstracts were screened by one main reviewer (XX) with a subset of 10% of the total titles and abstracts screened by XY. Agreement between reviewers was 100%.

Data extraction was carried out by one reviewer (XX) which involved combing the included papers for models of the stages which partnerships go through and the behaviours key to these stages. This information was then extracted into separate documents before being categorized and tabulated for relevance to the review. This search constitutes a sub-search within a larger realist synthesis.

Risk of bias and quality appraisal

Studies were not assessed for quality as the studies included here did not largely have human participants, and we did not find it pertinent to the research question to exclude models or frameworks based on quality-related criteria (Carroll and Booth, 2015).

Results

Paper selection

A total of 2763 titles and abstracts were screened, with the majority of titles and abstracts being screened out at this stage for being unrelated to inter-organisational collaboration. This resulted in 116 papers for full text screening (figure 2).. These papers were then screened for relevance to inter-organisational partnerships in the public sector, which resulted in 51 papers remaining. The majority of papers screened out at this stage were because they were partnerships within, rather than between, organizations (e.g., between patients and workers). These 51 papers were then further screened for relevancy to the procedural aspect of collaborating. This resulted in ten papers included for this final analysis (figure 2), with 41 papers excluded for not incorporating a model to understand the temporality of inter-organisational collaboration. These ten papers which applied models to public sector partnerships were then searched for citations of models (reference scanning) and other papers which may also apply models or outline key behaviours important to planning or implementing partnerships in the public sector (citation tracking). This process resulted in 16 further papers for inclusion, bringing the total to 26 papers (table 2) (Tuckman and Jensen, 1977; D'Aunno and Zuckerman, 1987; Gray, 1989; Kanter, 1989; Forrest, 1992; Zuckerman, Kaluzny and Ricketts, 1995; Fawcett *et al.*, 1995; Wilson and Charlton, 1997; Lowndes and Skelcher, 1998; Moyer *et al.*, 1999; Crisp, Swerissen and Duckett, 2000; Childs and Dobbins, 2003; Bazzoli *et al.*, 2004; Sydow, 2004; Wildridge *et al.*, 2004; Child, Faulkner and Tallman, 2005; Axelsson and Axelsson, 2006; Sullivan, Barnes and Matka, 2006; ourpartnership.org.uk, 2007; Lester, 2008; Mandell and Keast, 2008; Glasby and Dickinson, 2009; Kendall *et al.*, 2012; What Works Scotland, 2015; Adedoyin *et al.*, 2016; Murray, D'Aunno and Lewis, 2018).

[Figure 2 Location]

Figure 2. PRISMA diagram.

[Table 2 Location]

Models and behaviours identified in the literature

Fourteen complete models were found in the literature, in addition to five separate sets of descriptions of behaviours key to the partnership lifecycle that were not explicitly linked by authors to any particular stages (Tuckman and Jensen, 1977; D'Aunno and Zuckerman, 1987; Gray, 1989; Kanter, 1989; Forrest, 1992; Fawcett *et al.*, 1995; Wilson and Charlton, 1997; Lowndes and Skelcher, 1998; Moyer *et al.*, 1999; Childs and Dobbins, 2003; Sydow, 2004; Child, Faulkner and Tallman, 2005; ourpartnership.org.uk, 2007; Murray, D'Aunno and Lewis, 2018). Some of the 26 included papers overlapped in terms of models used, which is why these resulted in identification of only 14 models. The models can be summarized as either sequential (present as a series of linear stages) or cyclical (either flexible in stages or incorporating loops back to the beginning) in design (table 3). Descriptions of key procedural behaviours were identified in the literature where overlap was present with other papers. For example, Hudson *et al.* (1999, p. 256), in their review of public sector collaborations, posit '*recognition of the need to collaborate*' as very important, as well as '*identification of a legitimate basis for collaboration*', but have not mentioned when in the process this should occur. However, Hudson *et al*. (1999) also mention building trust as a key element, which Child, Faulkner and Tallman (2005) mention as key elements in stages 1 ('the nature of co-operation') and 2 ('establishing co-operation'). As such, certain behaviours are mentioned without the context of a stage in certain papers but are mentioned in the context of a stage in another, allowing for a greater understanding to be built. Table 3 outlines the key elements of the fourteen models identified in the literature.

243 [Table 3 Location]

Selecting an a priori framework

In line with best fit framework synthesis methodology, the thematic analysis of the models began with opting to use the simplest model as an a priori framework, to act as a suitable skeleton upon which to build. As such, the three-stage structure from Childs and Dobbins (2003) was selected. This basic model provided the understanding that something happens before a collaboration, followed by the process of putting it into action, and finally a later stage that involves ongoing collaboration (figure 3).

[Figure 3 Location]

Figure 3. Model by Childs and Dobbins (2003).

Coding against the a priori framework

As coding of other models onto this framework began, these 'core' stages quickly become distinct stages common to many included models and were labelled as Planning, Implementation, and Maintenance stages. Stages synonymous with Planning were found to be present in thirteen of the models, and all of them included stages coded as Implementation. Some models had multiple stages coded to fall within what we understood as Implementation, such as ourpartnership.org.uk's model, in which both 'conflict' and 'collaborating' was coded to Implementation. Likewise, for Kanter's (1989) model, originating in the private sector but applied to the public sector by Zuckerman et al. (1995), both 'Learning to collaborate' and 'Changing within' was coded to Implementation, although 'learning to collaborate' may also overlap somewhat with Planning. Kanter's (1989) model also ends with 'changing within' and does not include any maintenance phase. Seven models do include a phase in which the partners are collaborating more smoothly than during 'Implementation', in which it becomes almost second-nature to do so (e.g. Childs & Dobbins (2003)) – e.g. 'creating a self-sustaining partnership', or Child, Faulkner & Tallman (2005), 'maturing relationship'. This is what served as foundational evidence for the Maintenance stage, which was included in some form in seven models.

However, it became clear when coding that there may also be stages that occur prior to the onset of collaboration. Two models referred to 'the nature of co-operation' (Child, Faulkner and Tallman, 2005) and 'Problem-setting' (Gray, 1989), which establish that partnerships require a stimulus in order for organizations and actors to begin exploring collaboration as a solution to a problem. A further distinct stage also became clear - and that was the concept of 'establishing the relevant stakeholders' (Moyer *et al.*, 1999), 'pre-partnership collaboration' (Lowndes and Skelcher, 1998) and 'selection or courtship' (Kanter, 1989). This stage, in some models, was conflated with another stage, but was distinct in others. However, making this distinct from Planning, this stage does not involve setting up structures required for collaborating, but rather is focused on developing inter-personal relationships and identifying the right people to work with. Stages analogous to this process - which here we termed 'Connecting', were present in eleven models.

What happens after collaborations are established is also very important to the life cycle of organisations. Although some models do not refer to what may happen, seven included an understanding that collaborations may come to a conclusion or otherwise morph into another form. For example, Tuckman and Jensen (1977) refer to 'adjourning' from a partnership, D'Aunno and Zuckerman (1987) refer to a 'critical crossroads' and Lowndes and Skelcher (1998) to 'partnership termination or succession'. As such, in addition to Maintenance of the collaboration, we included Dissolution as an element that can also be an outcome of a collaborative arrangement.

As such, in our 'a priori' model, we have named the stages as follows: Contemplating, Connecting, Planning, Implementation, and Maintenance or Dissolution phases. While these stages may have some overlap, we believe them to be analytically distinct (table 4). The behaviours which characterize these stages will be explained in further detail in the following section, and additional complexity incorporated into the section thereafter.

[Table 4 Location]

Coding behaviours against the a priori framework

It is our understanding that a stage in a model describes a set of activities which is usually performed in a distinct period of time. As such, in this second stage, behaviours were decoupled from their original models and re-coded against the a priori framework. This meant there were five additional sets of behaviours resulting in 18 total sets (and sources) of behavioural information (table 3). Each behaviour was coded into only one phase. However, we did find substantial information about how frequently existing models mention various behaviours which map onto this novel composite model.

All included 'behavioural sets' were found to include behaviours relevant to Planning and Implementing partnerships. The Planning phase included behaviours such as "setting targets, establishing management teams" (Wilson and Charlton, 1997), "fostering partnership working values and engagement" (Crisp, Swerissen and Duckett, 2000), and "developing basic agreement" (Kanter, 1989). The identified behaviours were summarized in the composite model as "forming an action plan", "establishing required structure", and "formalizing agreements" (figure 5). Behaviours analogous to the Connecting stage had less representation in the literature, with behaviours coded to it from thirteen (72.3%) of the identified behaviour sets. Connecting differed from Planning by being keenly related to interpersonal processes, and for revolving around the initial processes of envisioning the relationship by and between actors. For example, Lowndes and Skelcher (1998) put forward "informality, trust and co-operation, willingness to work together", and ourpartnership.org.uk (2007) establish that, in this stage, "partners get to know each other and plan future activities", and undergo "realistic self-appraisal and appraisal of partners" (Kanter, 1989). Additionally, according to Hudson et al (1999), the beginnings of "wide organizational ownership" can be sowed at this stage. These have been summarized in our composite model as "reaching out to potential collaborators",

"building trust", "establishing respect and ground rules", and "building capacity to collaborate".

Implementation included behaviours such as "managing inevitable conflict between partners" (ourpartnership.org.uk, 2007), "experience of difficulties in new relationship" (Kanter, 1989) and "evaluating and refining action plan" (Wilson and Charlton, 1997), and is characterized by the beginning and middle phases of putting the collaboration into action, undergoing problem solving as conflicts arise. The composite model integrates these, and others not mentioned here as "executing the action plan", "forming required structures", "managing conflict", "managing ongoing collaboration", and "evaluating and refining action plans". This moves on to maintenance, in which behaviours for the maintenance phase were present in eight of the included behavioural sets. Behaviours in the Maintenance phase are distinct from those in Implementation; as while implementation is characterized by "managing conflicts, managing competition within the partnership" (Lowndes and Skelcher, 1998), "building mechanisms to overcome barriers" (Kanter, 1989), and "sustaining trust between members" (Tuckman and Jensen, 1977; Axelsson and Axelsson, 2006); Maintenance, rather, is characterized by a relative lack of conflict, reaping benefits, and looking outwards, and is a stage that may not be reached by all partnerships. It is the stage in which the ultimate outcomes of partnerships are most likely to be achieved, as the focus moves from the functioning of the partnership to the achievement of goals. For example, authors propose "strategies to maintain partnership" (Lowndes and Skelcher, 1998), "internal changes required to sustain relationship" (Kanter, 1989), and "routinization of network co-operation" (Sydow, 2004). These have been summarized in our model as "continued delivery of the partnership", and "longer-term aims of the partnership are actively achieved".

Just as fewer models mentioned the Contemplation aspect of collaborating, our thematic analysis identified that only four of the behaviour sets included incorporated behaviours

analogous to 'thinking about' collaborating before it actually begins (e.g. Child, Faulkner, and Tallman 2005; Gray 1989). For example, the paper by Hudson et al (1999) puts forward behaviours such as "recognizing the need to collaborate", and "identification of a legitimate basis for collaboration". These and others have been integrated into the model as "defining the problem", "identifying resources", "identifying stakeholders", "considering solutions to problems, i.e., collaborative forms". Likewise, Dissolution-type behaviours such as "letting partnership die, or keeping certain aspects but not others" (Lowndes and Skelcher, 1998) and "ending one or more partners' involvements" (ourpartnership.org.uk, 2007) were only present in five behavioural sets. These were summarized in our composite model as either dissolution due to irreconcilable conflicts, or due to completion of the aims of the collaboration. As Contemplation and Dissolution stages are more key to understanding the life cycle an organization goes through when considering collaboration, it may be simply that many of these papers (and thus models) were not seeking to identify what happens before and after collaborations are occurring. However, in pragmatic terms, a collaboration generally only arises as a result of a problem that requires collaboration to solve, and as such, adopting a life-cycle approach requires the inclusion of these stages.

Upon recoding the behaviours to the stages of the model, all the behaviours were found to fit into our developing framework without requiring revision to the stages themselves. This suggested that our formulation of stages was sufficient for a good fit of existing understandings of collaborative processes in the literature. Table 5 depicts the full set of behaviours and stages of the included models and behavioural sets as coded against the final model. As can be seen, Contemplating and Dissolution were most unrepresented by pre-existing models. Some behaviours that are analytically distinct to each stage are mentioned in figure 4.

Adding relationships and pragmatic complex-systems thinking to the model

We argue that for the purposes of this model it is more pragmatic to consider the organizations involved as the units of analysis, rather than a singular collaboration. This is because healthcare and other public sector organizations may go through multiple collaborative arrangements throughout their lifetime, or be involved in several at once, and a prior collaborative arrangement may lead to consequences for a future one (Rees, Mullins and Boviard, 2012; Aunger, Millar, Rafferty, *et al.*, 2022). To this end, we incorporated a cyclical element into the model, which links the end of the model back to the beginning. This is because, as others in the literature have suggested, any learnings gained from prior collaborations will recycle themselves into aiding or abetting any similar endeavours in the future (Wildridge *et al.*, 2004; Cameron, Lart and Bostock, 2014).

Such processes lend themselves to other evidence in the literature, that of collaboration 'micro-cycles'. One such example is the concept of trust between partners, whereby trust between workforces is reinforced over time as the collaboration yields results in a reciprocal and recursive manner, or when information is shared between partners (Lester, 2008; What Works Scotland, 2015). As such, we have conceptualized movement between the Contemplating, Connecting, and Planning stages as being cyclical, to account for aspects such as trust and respect which may be self-reinforcing in nature, and to indicate potential overlap between stages in terms of which organizational behaviours may be taking place. Included literature also suggests that it is likely that many organizations may seek to collaborate multiple times without finding the right partner, thus, they move from Contemplating to Connecting and back again without gaining much traction to go any further (Hudson *et al.*, 1999). However, based on included studies, it is much less likely that a collaboration will move from Maintenance back to Planning (D'Aunno and Zuckerman, 1987; Murray, D'Aunno and Lewis, 2018).

Given the already significant number of interrelated contextual elements and actors at play within organizations, inter-organizational collaborations constitute even greater complex adaptive systems for which no model can truly hope to capture every degree of variance (Braithwaite *et al.*, 2018; Salignac *et al.*, 2019). Therefore, we were keenly aware that a typical sequential model has little hope of capturing the reality of collaboration processes. By presenting a cyclical model with further recursive elements, we hope that the model may better capture the variability inherent to the reality of collaboration, as feedback loops can emerge in the system at multiple times, damping or enhancing outputs (Lester, 2008; Braithwaite *et al.*, 2018). The variability we intend for the model can also be situated within a contemporary process understanding, wherein our model should be interpreted within a 'weak' (change occurs in phases) process view (Langley, 2007; Sandberg, Loacker and Alvesson, 2015). As such, the 'stages' in our model should be interpreted as phases or times during which certain behaviours occur *more frequently* than others, and not be interpreted as stating that behaviours can *only* occur in those stages (Langley *et al.*, 2013).

406 *[Figure 4 Location]*

407 *Figure 4. Finalised composite model.*

Some collaborations such as mergers may have 'expiry dates' from the outset, and in the case of a merger or acquisition, become a singular unit at the end of the lifecycle, forming a new entity - defined here as a successful end to a collaboration. In these cases, the outcome (formulation of a new entity) may technically be Dissolution of a collaboration, rather than Maintenance of one. Dissolution may also occur unintentionally due to failure in ability to work together as intended (which could be caused by a myriad of factors). We argue that these two main outcome states are reflective of the two major options facing most collaborative forms identified by included models (D'Aunno and Zuckerman, 1987; Lowndes and Skelcher, 1998; Wildridge *et al.*, 2004; Child, Faulkner and Tallman, 2005; ourpartnership.org.uk, 2007). No other major 'end-states' were identified in the literature.

We are also aware that some collaborations may be mandated by governmental organizations, which could cause many behaviours key to the Contemplating and Connecting phase, such as building trust and respect, to be skipped, leading to negative outcomes further along in the process (figure 5) (Connell and Mannion, 2006; Miller and Millar, 2017; Aunger *et al.*, 2021; Aunger, Millar and Greenhalgh, 2021). As such, we have added the possibility of entering straight into the Implementation phase, or into a rudimentary Planning phase, as part of the model (figure 5). To account for these pragmatic considerations, the model must be viewed as flexible, with it being possible for organizations to enter and exit at any stage from Contemplating to Implementation, with the caveat that it may not be optimal from a relationship-building perspective to do so (Dickinson and Glasby, 2010).

Certain practices may be key at differing stages

The model and the literature included demonstrates that particular behaviours and organizational processes are intrinsic to various stages of the collaborative lifecycle, and it may be that detrimental effects could result if these are not properly performed (Dickinson and Glasby, 2010). One could foresee a scenario, such as in a mandated situation outlined above,

in which stages such as Connecting or Planning are almost entirely skipped or improperly conducted, resulting in a lack of trust and respect between partners, unclear objectives, improper governance arrangements, and a lack of proper resource and capacity allocated to achieving the collaboration (Dickinson and Glasby, 2010). As such, it is key to implement proper Planning and Connecting phases to ensure the logistical and workforce-related elements of the collaboration are implemented properly later. This life-cycle model has been used by the research team to inform a realist synthesis of healthcare collaborations as a framework for understanding *when* various contextual factors affect the process of collaborating (Aunger *et al.*, 2021; Aunger, Millar and Greenhalgh, 2021; Aunger, Millar, Greenhalgh, *et al.*, 2022).

[Table 5 Location]

Discussion

While attempts have been made to model how inter-organizational collaborations in healthcare and the wider public sector evolve over time, most existing models are overly simplistic and predominantly linear (Thistlethwaite, 2008; Perkins, 2011; Aldridge, Mulla and Turner, 2016; NHS Improvement, 2016, 2017; Miller and Millar, 2017; Northern Ireland Audit Office, 2019) and did not draw on a modern process approach (Langley *et al.*, 2013). Additionally, ~~they~~ included models often used the collaboration as the unit of analysis rather than the organization. ~~, however, we argue this~~This, we argue, may be erroneous, considering that we found through our work that many healthcare organisations are involved in multiple concurrent collaborations at any one time, meaning that learnings from one ongoing collaboration can bleed into another (Aunger, Millar, Greenhalgh, *et al.*, 2022; Aunger, Millar, Rafferty, *et al.*, 2022). Additionally, by reviewing existing models we found that many existing models most frequently neglected to include a contemplative stage – which we would argue is essential to defining the nature of the required collaboration in the minds of key actors. Indeed, many organisations are

continually contemplating some form of collaboration but do not progress beyond this stage. This has led to use of overly reductive models in the applied collaboration literature which could subsequently negatively impact any analyses relying on their accuracy.

As an applied example of how this novel composite model could improve an analysis, we can look to The Northern Ireland Audit Office (2019). In their review and guide to public sector partnership working, intended to help others implement such partnerships, they applied the 'forming, storming, norming' etc. model by Tuckman and Jensen (1977) to characterize the lifecycle of partnerships. However, the model by Tuckman and Jensen (1977) is sequential and not purpose-built for the public sector, nor for inter-organizational partnership working, and, rather, is focused on team building in smaller groups within an organization. As such, it is missing elements that we would argue are key to the understanding of the partnership life cycle, such as a contemplation-like stage. We would argue that our novel composite model would provide greater evaluative applicability to such a review of collaborations in the public sector, as it incorporates these oft-missed elements such as Contemplating, is purpose-built upon multiple sources of evidence, acknowledges that organisations can move from Planning back to Contemplating in many cases if suitable partners are not identified, and incorporates a life-cycle element that is more applicable to organizations (as complex adaptive systems) as a unit of analysis. This novel composite model also covers some of the gaps inherent to models included in this synthesis.

As further example, we would argue that use of some of the included models on their own, such as that by Forrest (1992), could be insufficiently informative by missing out key elements - such as the process of Connecting. Likewise, others, such as Wilson and Charlton (1997), while incorporating most of the elements key to this model, miss out entire stages like Contemplating, as well as the concept of recycling knowledge for use in further collaborations. Missing such stages and behaviours may cause crucial attitudinal or environmental factors to

be absent when analysing the level of work required to implement a collaboration, or when understanding why a collaboration was successful or not.

As discussed earlier, the intention for this model was to encompass a variety of collaboration types. One more complex form of collaboration, typical of a very high degree of integration, is a merger, the process of which has been frequently modelled in the merger and acquisition literature. In the absence of purpose-build models for inter-organisational collaboration in healthcare, NHS Improvement (2017) drew on a sequential model from the private sector by Davis (2012) to depict the typical process of mergers in the NHS. The use of a model from the private sector may be appropriate here, as the merger is an example of a 'collaboration' that may be relatively similar between both the private and public sector (Field and Peck, 2003), likely due to its high degree of formalization and integration (Aunger *et al.*, 2020). The model by Davis (2012) starts at 'search and target', moving to 'due diligence', 'negotiation and deal structure' in parallel with '100-day planning exercise' and 'day 1 integration plan', to 'integration', 'learn', and 'operate new business'. We would suggest that these phases map well onto the stages present in our novel model due to the overlap in key behaviours. For example, Contemplating and Connecting incorporates 'searching for collaborators', 'due diligence' is an aspect of Planning, and 'negotiation and deal structure' come into Connecting and Planning respectively. Likewise, 'learning' is incorporated as the cyclical element through which learnings are recycled from collaboration to collaboration. 'operate new business' could be considered Dissolution once all active merger activities are concluded.

Included sources seeking to understand IOCs in healthcare did not draw on contemporary process views or models (Berends and Sydow, 2019) which may suggest a disconnect between wider management and organisation studies (MOS) literature and the healthcare space, even though the MOS literature may contain more up-to-date and better-validated models for understanding IOC (Berends and Sydow, 2019). One example model, published recently,

sought to understand collaboration in circular oriented innovation and identified a number of process phases including "identification of need and articulation of intent to collaborate", "identifying and selecting partners", "aligning partners on a shared purpose", "defining structural and procedural governance mechanisms", "defining a value capture model", and "employing dynamic aspects of collaboration within design and implementation" (Brown *et al.*, 2021). These phases are broadly similar to those outlined in our composite model.

As mentioned earlier, while life stages are similar between public and private sector organizations, the behaviours, underlying drives, and contextual factors affecting them at each stage (which we have not looked at here) are likely to be different (Mandell and Steelman, 2003). For example, public sector healthcare organizations that wish to collaborate are typically more beholden to the desires of regulators that could potentially force organizations to work together, and have differing rules regarding competitiveness and antitrust, providing implications for collaboration from the outset (Barringer and Harrison, 2000). Additionally, organizations involved may have more incentive to collaborate due to the core drive of serving the public good rather than the profit motives inherent to the private sector (Mandell and Steelman, 2003).

Due to the use of the robust best fit framework synthesis methodology to draw together commonalities and differences in existing models, the novel composite model provides a refined framework of understanding for practitioners working in healthcare and wider public sector seeking to enter a collaborative arrangement or collaboration with other organizations. Likewise, it provides a key resource for practitioners and evaluators of such programs across a range of collaboration types, such as buddying, mergers, acquisitions, chains, federations, and joint ventures (Aunger *et al.*, 2020, 2021).

Limitations

Although broad, the search strategy in this paper may have not identified every process model of collaboration in the public sector that is present in the literature and as such that may have undermined the validity of the model to some cases of collaboration. In particular, our systematic literature searches focused particularly on the healthcare sector, as this project is linked to a realist synthesis investigating how and why inter-organizational collaborations in healthcare in the UK work. Since we were including only models *applied* in the healthcare setting, ~~As such,~~ we did not include private sector or wider management literature in the search, as it would have increased the number of records beyond what was manageable for the study team. Additionally, we may not have included models from wider MOS literature if they were not applied within the healthcare setting. However, we successfully gathered wider public sector research ~~with~~ by drawing on citation tracking, reference scanning, and Google Scholar searching. ~~We also~~Since we included models that were both *applied to* or *made explicitly for* the public sector~~. As such,~~, we assumed that authors who used models from the private sector and were applying them to the public sector were doing so because these models were cross-compatible. This ~~, which~~ increased the number of models we were able to include and ~~better reflected the~~ ensured we reflected the reality of models used in analyses in the literature. ~~It is important to note that we included papers where the models were *applied* and as such our literature sample was application-led.~~ Of the final literature included, 17 out of 26 papers were from the wider public sector, 9 were related to healthcare only, and 10 out of 14 models used in the synthesis were designed for wider public sector use. As such, we are confident we included all relevant models applied to model collaborations in public healthcare systems.

While the adoption of the best fit methodology allowed for a more systematic approach to the process, the coding of behaviours relied on a subjective human methodology and as such it may have been possible for researcher bias to have unintentionally coloured the results.

Likewise, there may have been differences with how we interpreted the behaviours versus how the original authors intended them.

There is also substantial critique of the collaboration and integrated care literature, arguing that it is often too theoretical in nature and does not delve sufficiently into developing practical advice or tools that prove useful for those 'on the ground' (Dickinson, 2014). We would argue that the lifecycle model presented here can serve as an actionable framework to guide the process of planning and implementing collaborations. Our use of this model to inform the thinking in our realist synthesis of collaborating in healthcare is evidence of this - aimed at providing actionable evidence for policymakers and practitioners alike (XXXX). This will incorporate the present findings as a framework for 'when' it is best for certain behaviours to occur in the collaboration process (XXX).

Conclusion

A systematic review and seven-step 'best fit' framework synthesis methodology was used to identify papers in the literature regarding inter-organizational collaborations in healthcare. These included papers were then scanned for relevant models of the process of collaborations as well as behaviours important to various stages. Fourteen models were identified from twenty-six included papers. Within these papers, five further sets of descriptions of behaviours that were considered key to planning or implementing collaborations were identified. Models were found to fall into sequential or life cycle style designs and typically lacked "contemplative" or "dissolution" type stages. A novel 'composite model' was formulated using a thematic analysis approachh. We adopted the relatively simple model by Childs & Dobbins (2003) as an a priori framework and we coded stages and behaviours from other models against this a priori framework to form a novel model. The completed novel composite model incorporated a life cycle design over five stages: Contemplating, Connecting, Planning, Implementation, and Maintenance or Dissolution. The model suggests that learnings from

completed collaborations can be recycled for use in future collaborations, and we propose that the model can be entered into and exited at various stages as well depending on the circumstances. In line with a 'weak' process view, each stage should be considered a phase in which certain behaviours should occur more than others, and not that outlined behaviours can only occur in certain stages. Our model is intended to be useful as an evaluative tool for those implementing collaborations and partnerships, as well as for analysts of such arrangements.

Author contributions

XXX designed the study, conducted the searches, data extraction, best fit synthesis, and wrote the manuscript. XY acted as independent reviewer, provided expertise on the topic, and edited the manuscript. XZ provided expertise on the methodology and edited the manuscript. All authors approved the final version of the paper.

Conflict of interest

The authors have no reported conflicts of interest.

Acknowledgements and funding statement

The research was funded by the XXXX. The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the XXXX program.

References

Adedoyin, A.C. *et al.* (2016) 'Faculty experiences of merger and organizational change in a social work program', *Journal of Evidence-Informed Social Work*, 13(1), pp. 87–98. Available at: https://doi.org/10.1080/15433714.2014.997094.

Aldridge, S., Mulla, A. and Turner, A. (2016) 'Rapid Evidence Scan', (April).

Aunger, J.A. *et al.* (2020) 'Building an initial realist theory of partnering across National Health Service providers', *Journal of Integrated Care* [Preprint]. Available at: https://doi.org/10.1108/JICA-05-2020-0026.

Aunger, J.A. *et al.* (2021) 'Why do some inter-organisational collaborations in healthcare work when others do not? A realist review', *Systematic Reviews*, 10(82). Available at: https://doi.org/10.1186/s13643-021-01630-8.

Aunger, J.A., Millar, R., Rafferty, A.M., *et al.* (2022) 'Collaboration over competition ? Regulatory reform and inter - organisational relations in the NHS amidst the COVID - 19 pandemic : a qualitative study', *BMC Health Services Research*, pp. 1–15. Available at: https://doi.org/10.1186/s12913-022-08059-2.

Aunger, J.A., Millar, R., Greenhalgh, J., *et al.* (2022) 'How, when, and why do inter-organisational collaborations in healthcare work? A realist evaluation', *PLoS ONE*, 17(4), pp. 1–29. Available at: https://doi.org/10.1371/journal.pone.0266899.

Aunger, J.A., Millar, R. and Greenhalgh, J. (2021) 'When trust, confidence, and faith collide: refining a realist theory of how and why inter-organisational collaborations in healthcare work', *BMC Health Services Research*, 21(602). Available at: https://doi.org/10.1186/s12913-021-06630-x.

Axelsson, R. and Axelsson, S.B. (2006) 'Integration and collaboration in public health - A conceptual framework', *International Journal of Health Planning and Management*, 21(1), pp. 75–88. Available at: https://doi.org/10.1002/hpm.826.

Barringer, B.R. and Harrison, J.S. (2000) 'Walking a tightrope: Creating value through interorganizational relationships', *Journal of management*, 26(3), pp. 367–403.

Bazzoli, G.J. *et al.* (2004) 'Two decades of organizational change in health care: What have we learned?', *Medical Care Research and Review*, 61(3), pp. 247–331. Available at: https://doi.org/10.1177/1077558704266818.

Berends, H. and Sydow, J. (2019) 'Introduction: Process views on inter-organizational

collaborations', *Research in the Sociology of Organizations*, 64(July), pp. 1–10. Available at: https://doi.org/10.1108/S0733-558X20190000064001.

Booth, A. and Carroll, C. (2015) 'How to build up the actionable knowledge base: the role of "best fit" framework synthesis for studies of improvement in healthcare', *BMJ quality & safety*, 24(11), pp. 700–708. Available at: https://doi.org/10.1136/bmjqs-2014-003642.

Braithwaite, J. *et al.* (2018) 'When complexity science meets implementation science: A theoretical and empirical analysis of systems change', *BMC Medicine*, 16(1), pp. 1–14. Available at: https://doi.org/10.1186/s12916-018-1057-z.

Brown, P. *et al.* (2021) 'A process model for collaboration in circular oriented innovation', *Journal of Cleaner Production*, 286, p. 125499. Available at: https://doi.org/10.1016/j.jclepro.2020.125499.

Bullock, J.B., Stritch, J.M. and Rainey, H.G. (2015) 'International comparison of public and private employees' work motives, attitudes, and perceived rewards', *Public Administration Review*, 75(3), pp. 479–489.

Cameron, A., Lart, R. and Bostock, L. (2014) 'Factors that promote and hinder joint and integrated working between health and social care services : a review of research literature.', *Health and Social Care in the Community*, 22(3), pp. 225–233.

Carroll, C. *et al.* (2013) '"best fit" framework synthesis: Refining the method', *BMC Medical Research Methodology* [Preprint]. Available at: https://doi.org/10.1186/1471-2288-13-37.

Carroll, C. and Booth, A. (2015) 'Quality assessment of qualitative evidence for systematic review and synthesis: Is it meaningful, and if so, how should it be performed?', *Research Synthesis Methods* [Preprint]. Available at: https://doi.org/10.1002/jrsm.1128.

Carroll, C., Booth, A. and Cooper, K. (2011) 'A worked example of "best fit" framework synthesis: A systematic review of views concerning the taking of some potential chemopreventive agents', *BMC Medical Research Methodology* [Preprint]. Available at: https://doi.org/10.1186/1471-2288-11-29.

Child, J., Faulkner, D. and Tallman, S. (2005) 'Cooperative Strategy: Managing Alliances, Networks, and Joint Ventures'.

Childs, S. and Dobbins, S. (2003) 'The research-practice spiral', *Vine*, 33(2), pp. 51–64. Available at: https://doi.org/10.1108/03055720310509073.

Connell, N.A.D. and Mannion, R. (2006) 'Conceptualisations of trust in the organisational literature: Some indicators from a complementary perspective', *Journal of Health, Organisation and Management*, 20(5), pp. 417–433. Available at: https://doi.org/10.1108/14777260610701795.

Conteh, C. (2013) 'Strategic inter-organizational cooperation in complex environments', *Public Management Review*, 15(4), pp. 501–521.

Crisp, B.R., Swerissen, H. and Duckett, S.J. (2000) 'Four approaches to capacity building in health: consequences for measurement and accountability', *Health Promotion International*, 15(2), pp. 99–107. Available at: https://doi.org/10.1093/heapro/15.2.99.

D'Aunno, T.A. and Zuckerman, H.S. (1987) 'Life-Cycle Model of Organizational Federations: The Case of Hospitals', *The Academy of Management Review*, 12(3), pp. 534–545.

Davis, D.A. (2012) *M&A Integration: How To Do It. Planning and delivering M&A integration for business success*. John Wiley & Sons.

Dickinson, H. (2014) 'Making a reality of integration: Less science, more craft and graft',

Journal of Integrated Care, 22(5), pp. 189–196. Available at: https://doi.org/10.1108/JICA-08-2014-0033.

Dickinson, H. and Glasby, J. (2010) '"Why Partnership Working Doesn't Work" Pitfalls, problems and possibilities in English health and social care', *Public Management Review*, 12(6), pp. 811–828.

Elston, J.M. (2013) 'Partnerships', in *Oxford Handbook of Public Health 3rd Ed*. Oxford: Oxford University Press, pp. 526–538.

Fawcett, S.B. *et al.* (1995) 'Using empowerment theory in collaborative partnerships for community health and development', *American Journal of Community Psychology*, 23(5), pp. 677–697. Available at: https://doi.org/10.1007/BF02506987.

Field, J. and Peck, E. (2003) 'Mergers and acquisitions in the private sector: What are the lessons for health and social services?', *Social Policy and Administration*, 37(7), pp. 742–755. Available at: https://doi.org/10.1046/j.1467-9515.2003.00369.x.

Forrest, J.E. (1992) 'Management aspects of strategic partnering', *Journal of General management*, 17(4), pp. 25–40.

Glasby, J. and Dickinson, H. (2009) *International Perspectives on Health and Social Care: Partnership Working in Action*, *Health (San Francisco)*.

Glasby, J., Dickinson, H. and Miller, R. (2011) 'Partnership working in England—where we are now and where we've come from', *International journal of integrated care*, 11(Special 10th Anniversary Edition).

Graebner, M.E. *et al.* (2014) 'The Process of Post-Merger Integration: A Review and Agenda for Future Research', *Academy of Management Annals*, 78(4).

Gray, B. (1989) 'Collaborating: Finding common ground for multiparty problems'.

Greenhalgh, T. (2008) 'Role of routines in collaborative work in healthcare organisations.', *BMJ*, 337(7681), pp. 1269–1271.

Han, L. *et al.* (2020) 'Factors Influencing the Adoption of Health Information Standards in Health Care Organizations: A Systematic Review Based on Best Fit Framework Synthesis', *JMIR Medical Informatics*, 8(5), p. e17334.

Hare, D. (2020) 'The NHS' relationship with private providers "has changed before our eyes"', *The Health Service Journal2* [Preprint]. Available at: https://www.hsj.co.uk/coronavirus/the-nhs-relationship-with-private-providers-has-changed-before-our-eyes/7027476.article?mkt_tok=eyJpIjoiWWpsaVpUQmxNalkzWmpSaCIsInQiOiJ3XC82UGtXZHRIbk9JQmx1U1wvM3BLYjNxaHNuR1RIS1BWSFlCWkF1RFZnTFNxMm5NNFlHV1dQdT.

Hudson, B. *et al.* (1999) 'In Pursuit of Inter-Agency Collaboration In The Public Sector', *Public Management: An International Journal of Research and Theory*, 1(2), pp. 235–260. Available at: https://doi.org/10.1080/14719039900000005.

Jap, S.D. and Anderson, E. (2007) 'Testing a life-cycle theory of cooperative interorganizational relationships: Movement across stages and performance', *Management Science*, 53(2), pp. 260–275. Available at: https://doi.org/10.1287/mnsc.1060.0610.

Jurie, J.D. (1998) 'The International Encyclopedia of Public Policy and Administration'. JSTOR.

Kakemam, E. *et al.* (2020) 'Leadership and Management Competencies for Hospital Managers: A Systematic Review and Best-Fit Framework Synthesis', *Journal of Healthcare Leadership*, 12, p. 59.

Kanter, R.M. (1989) 'Becoming PALs: Pooling, allying, and linking across companies', *Academy of Management Perspectives*, 3(3), pp. 183–193.

Kendall, E. *et al.* (2012) 'Collaborative capacity building in complex community-based health partnerships: a model for translating knowledge into action.', *Journal of Public Health Management and Practice*, 18(5), pp. E1-13. Available at: https://doi.org/https://dx.doi.org/10.1097/PHH.0b013e31823a815c.

Langley, A. (2007) 'Process thinking in strategic organization', *Strategic Organization*, 5(3), pp. 271–282. Available at: https://doi.org/10.1177/1476127007079965.

Langley, A. *et al.* (2013) 'Process studies of change in organization and management: Unveiling temporality, activity, and flow', *Academy of Management Journal*, 56(1), pp. 1–13. Available at: https://doi.org/10.5465/amj.2013.4001.

Lester, H. (2008) 'Barriers and facilitators to partnership working between Early Intervention Services and the voluntary and community sector .', *Health and Social Care in the Community*, 16(5), pp. 493–500.

Lowndes, V. and Skelcher, C. (1998) 'The dynamics of multi-organizational partnerships: An analysis of changing modes of governance', *Public Administration*, 76(2), pp. 313–333. Available at: https://doi.org/10.1111/1467-9299.00103.

Mandell, M. and Keast, R. (2008) 'Evaluating the effectiveness of interorganizational relations through networks Developing a framework for revised performance measures', *Public Management Review*, 10(6), pp. 715–731. Available at: https://doi.org/10.1080/14719030802423079.

Mandell, M. and Steelman, T. (2003) 'Understanding what can be accomplished through interorganizational innovations the importance of typologies, context and management

strategies', *Public Management Review*, 5(2), pp. 197–224. Available at: https://doi.org/10.1080/1461667032000066417.

Miller, R. and Millar, R. (2017) *Partnerships for improvement: ingredients for success*, *Health Foundation*. Available at: https://health.org.uk/sites/health/files/PartnershipsForImprovement.pdf.

Mosca, L., Gianecchini, M. and Campagnolo, D. (2021) 'Organizational life cycle models: a design perspective', *Journal of Organization Design*, 10, pp. 3–18.

Moyer, A. *et al.* (1999) 'A model for building collective capacity in community-based programs: The elderly in need project', *Public Health Nursing*, 16(3), pp. 205–214. Available at: https://doi.org/10.1046/j.1525-1446.1999.00205.x.

Murray, G.F., D'Aunno, T. and Lewis, V.A. (2018) 'Trust, Money, and Power: Life Cycle Dynamics in Alliances Between Management Partners and Accountable Care Organizations', *Milbank Quarterly*, 96(4), pp. 755–781. Available at: https://doi.org/10.1111/1468-0009.12356.

NHS Improvement (2016) *Making mergers work: Factors affecting the success of NHS mergers*.

NHS Improvement (2017) *Mergers in the NHS : lessons learnt and recommendations*.

Northern Ireland Audit Office (2019) *Making Partnerships Work*. CDS. Available at: https://doi.org/10.1038/361768a0.

Nutt, P.C. (2005) 'Comparing Public and Private Sector Decision-Making Practices', *Journal of Public Administration Research and Theory*, 16(2), pp. 289–318. Available at: https://doi.org/10.1093/jopart/mui041.

762 ourpartnership.org.uk (2007) *Ourpartnership.org.uk*, *Guidance*.

763 Perkins, M.J. (2011) 'Models of Partnership Working: an Exploration of English NHS and
764 University Research Support Offices'.

765 Pugalis, L. and Bentley, G. (2013) 'Storming or performing? Local Enterprise Partnerships two
766 years on', *Local Economy* [Preprint]. Available at:
767 https://doi.org/10.1177/0269094213503066.

768 Quinn, R.E. and Cameron, K. (1983) 'Organizational life cycles and shifting criteria of
769 effectiveness: Some preliminary evidence', *Management science*, 29(1), pp. 33–51.

770 Rees, J., Mullins, D. and Boviard, T. (2012) *Partnership working*, *Research Report 88*.

771 Salignac, F. *et al.* (2019) 'Measuring dynamic collaborations: Collaborative health assessment
772 tool', *Australian Journal of Public Administration*, 78(2), pp. 227–249. Available at:
773 https://doi.org/10.1111/1467-8500.12386.

774 Sandberg, J., Loacker, B. and Alvesson, M. (2015) *Conceptions of process in organization and*
775 *management*. Oxford, UK: Oxford University Press.

776 Sarkies, M. *et al.* (2021) 'Understanding implementation science from the standpoint of health
777 organisation and management: an interdisciplinary exploration of selected theories, models and
778 frameworks', *Journal of Health Organization and Management*, 35(7), pp. 782–801. Available
779 at: https://doi.org/10.1108/JHOM-02-2021-0056.

780 Stubbart, C.I. and Smalley, R.D. (1999) 'The deceptive allure of stage models of strategic
781 processes', *Journal of Management Inquiry*, 8(3), pp. 273–286.

782 Sullivan, H., Barnes, M. and Matka, E. (2006) 'Collaborative capacity and strategies in area-
783 based initiatives', *Public Administration*, 84(2), pp. 289–310. Available at:

https://doi.org/10.1111/j.1467-9299.2006.00003.x.

Sullivan, H. and Skelcher, C. (2003) *Working Across Boundaries: Collaboration in Public Services*, *Health and Social Care in the Community*. Available at: https://doi.org/10.1046/j.1365-2524.2003.04183.x.

Sydow, J. (2004) 'Network development by means of network evaluation? Explorative insights from a case in the financial services industry', *Human Relations*, 57(2), pp. 201–220. Available at: https://doi.org/10.1177/0018726704042927.

The Dalton Review (2014) *Examining new options and opportunities for providers of NHS care*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/384126/Dalton_Review.pdf.

Thistlethwaite, P. (2008) *Bringing the NHS and local government together: a practical guide to integrated working*, *Care Services Improvement Partnership*.

Tuckman, B.W. and Jensen, M.A.C. (1977) 'Stages of Small-Group Development', *Group & Organisation Studies*, 2(4), pp. 419–427.

Ven, A.H. Van De (1992) 'Suggestions for Studying Strategy Process: A Research Note', *Strategic Management Journal*, 13(Special Issue: Strategy Process: Managing Corporate Self-Renewal), pp. 169–191.

Wegner, D. *et al.* (2016) 'The Dynamics of Cooperation: Proposal of a Life Cycle Model of Small-Firm Networks', *Gestão & Regionalidade*, 32(94). Available at: https://doi.org/10.13037/gr.vol32n94.2805.

What Works Scotland (2015) 'Partnership working across UK public services', (December),

p. 26.

Wildridge, V. *et al.* (2004) 'How to create successful partnerships — a review', *Health Information and Libraries Journal*, 21, pp. 3–19.

Wilson, A. and Charlton, K. (1997) *Making partnerships work: A practical guide for the public, private, voluntary and community sectors*. Joseph Rowntree Foundation York.

Zuckerman, H.S., Kaluzny, A.D. and Ricketts, T.C. (1995) 'Alliances in health care: What we know, what we think we know, and what we should know', *Health Care Management Review*, 20(1), pp. 54–64.